and the impacts of each alternate on existing and future land-use plans.

The **Tourism Work Group** survey of 91 businesses along existing U.S. 20, where 59 businesses answered the survey, found that 79 percent of respondents felt that a freeway may decrease their business activity due to bypasses of local communities.

Fifty-eight percent felt that a freeway may decrease their land values, 16 percent said it may increase land values and 21 percent felt it would have no impact; 83 percent favored improving old U.S. 20 with bypasses around towns rather than building a freeway.

Tourism Work Group members also reviewed the technical studies provided by IDOT of the impacts on visual aesthetics and scenic values in the area. They provided input to study designers who modified the weighting of criteria to more accurately reflect local values.

## IMPACT ASSESSMENT METHODOLOGY

To aid in developing a comfortable format for Council members to explore their ideas and to build consensus as a group representing the region, IDOT's public involvement consultant presented several different methodologies that could be used to evaluate the impacts of a new four-lane highway.

The Council reviewed the Tactical Assessment Process (TAP); a modified Nominal Group method based on conflict resolution in which a contract is established with opposing factions. Members also reviewed the Analytical Hierarchy Process (AHP), a computer-assisted decision-making methodology using matrix algebra to make pair-wise comparisons. The Nominal Group method, a more subjective method for narrowing concerns, prioritizing impacts and making decisions on alternates, also was reviewed.

Council members rejected the TAP method since they believed that a contentious backdrop against which to complete the study did not exist. Members felt the AHP computer method, although objective, would be difficult for the Council to follow and explain to the public.

Council members agreed that all Work Groups would use the same methodology for assessing impacts in order to bring comparable information to the Council for developing recommendations to IDOT.

The Council decided to use an impact evaluation matrix developed by the consultant for assessing the impacts of each alternate. The matrix approach would utilize IDOT technical study data or other value scale measures to quantify important impacts. An explanation of this impact evaluation matrix process is provided in Appendix A. Initial core criteria were developed by a subcommittee of each Work Group using the Nominal Group method.

The number of criteria was to remain small for each Work Group to ensure that major factors were represented in the analysis rather than diluting the importance of each criteria by selecting too many. (See Work

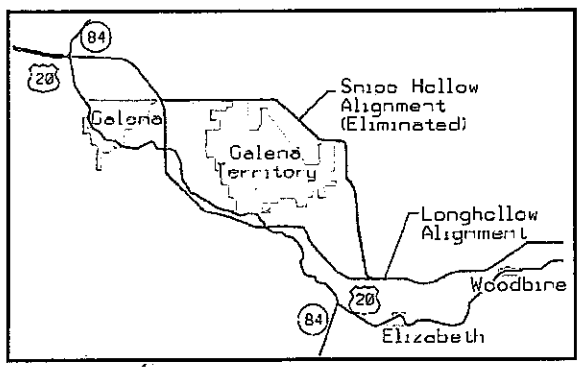
Group reports for criteria listings and weightings – Appendices B-F).

In most cases, each Work Group was able to select specific data from IDOT's technical studies to provide measures for their criteria. The Council asked IDOT to address certain criteria in their technical studies as well. Each alternate in a Work Group's matrix received an alternate preference score (APS). The alternate with the lowest APS score for each Work Group had the least impact on the region for that interest area; i.e., agriculture, economic development, environment, government or tourism.

## ALTERNATE HIGHWAY ALIGNMENTS

The original intent of the U.S. Route 20 project was to study two alternate freeway alignments, Longhollow and Irish Hollow. However, as the study progressed, other alternate alignments were added.

One of the first alignments added to the study at the suggestion of area residents and at the request of the Environment Work Group was Snipe Hollow. However, after preliminary engineering and environmental technical studies, the Snipe Hollow alignment was eliminated from further study because it did not meet three of the five elements of IDOT's stated purpose and need for the new four-lane highway.




Another alignment added to the study was the Expressway alignment. This alignment also was added at the request of the public and Work Groups. The assumption was that it generally would follow the existing U.S. 20 alignment.

However, because of concerns raised by local and state conservationists about the Tapley Woods area in Jo Daviess County and the rugged terrain and poor horizontal and vertical geometrics of existing U.S. 20, much of the existing alignment could not be used. This resulted in an Expressway alignment that generally followed existing U.S. 20 east of Woodbine but was displaced from it west of Woodbine.

Because of these factors, IDOT shifted the Expressway alignment south, avoiding Tapley Woods. At the suggestion of the Tourism Work Group, IDOT considered the Expressway alignment in the area of Tapley Woods as both an Expressway and a Freeway. The Freeway alternate came to be known as the Upper Irish Hollow alternate.

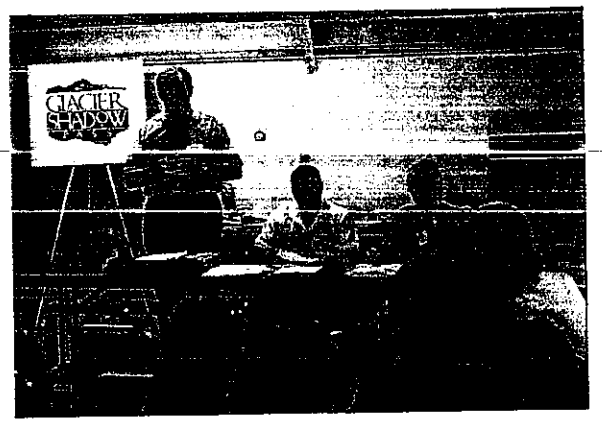
In the end, IDOT studied 12 alternates for the U.S. 20 project. (See Alternate Alignment Maps and Descriptors – Exhibits 1 and 2.) The 12 alternates included in the Work Groups' and Council matrices were variations on the Irish Hollow, Upper Irish Hollow and Longhollow Freeway alignments and the Expressway alignment. Variations on these alignments included the addition of a tunnel to the Freeway alignments for Irish Hollow and Upper Irish Hollow, north/south variations around Simmons Mound for all Freeway alignments, and north/south variations around Eleroy for the Expressway alignment.

## WORK GROUP CRITERIA

Each Work Group developed its own weighted criteria for assessing impacts in accord with the Council-directed methodology. (See Appendix A.)

## ALTERNATE PREFERENCE SCORES

Alternate preference scores (found in the far right column of each Work Group matrix, see Appendices B-F) were used to represent the level of overall negative impacts. The larger the score, the greater the impacts. Therefore, the lowest score would represent the preferred alternate.




Each Work Group presented a written and verbal report of its findings to the Council at a formal meeting, including its matrix rating the alternates. A rationale for each Work Group's assessment of impacts was given so that the Council could consider each Work Group report on its own merits. (See Work Group reports – Appendices B-F)

**Agriculture Work Group** Top Two Alternate Preferences

Alternate #1 (Score: 7.4) Longhollow Freeway with North Simmons Mound Variation

Alternate #2 (Score: 7.7) Longhollow Freeway with South Simmons Mound Variation

**Economic Development Work Group** Seven-Way Tie for Top Alternate Preference

There was no major difference in preference scores recorded for the freeway alternates.

**Environment Work Group** Top Two Alternate Preferences

Alternate #1 (Score: 6.1) Longhollow Freeway with North Simmons Mound Variation

Alternate #2 (Score: 6.1) Longhollow Freeway with South Simmons Mound Variation

**Government Work Group** Top Two Alternate Preferences

Alternate #9 (Score: 6.2) Upper Irish Hollow Freeway with South Simmons Mound Variation

Alternate #7 (Score: 6.4) Upper Irish Hollow Freeway with North Simmons Mound Variation

**Tourism Work Group** Top Two Alternate Preferences

Alternate #11 (Score: 7.2) Expressway South Eleroy Variation

Alternate #12 (Score: 7.3) Expressway North Eleroy Variation

All other freeway alternates showed no major difference in preference scores, ranging from 8.4 to 8.9.

Because the Economic Development and Tourism Work Groups focused heavily on business development in their analysis, and because the freeway alternates are in relatively close proximity to one another, there is little to distinguish between them in this regard. This is reflected in their narrow range of preference scores.

The two expressway alternates were rated last by all Work Groups except Tourism, showing a preference overall for freeway over expressway alternates.

The Council reviewed these individual Work Group alternate preference scores and their reports on the alternate alignments. This review was a central part, but not all of the Council's findings.

## ADVISORY COUNCIL CRITERIA

Council members identified six issues not analyzed by the Work Groups that they felt needed to be addressed. . They identified and weighted the following criteria for analysis using the same matrix model used by the Work Groups:

Criteria weights were obtained by pair-wise comparisons by Council members.

Criteria 1: Traffic Safety [30.4%]

Measure: Projected number of total accidents for the year 2020 for the new roadway and remaining portions of existing U.S. 20.

Rationale: Since safety is a primary need for a four-lane highway, the alternate(s) with the lowest number of accidents would be most beneficial.

Criteria 2: Future Highway needs [16.6%]

Measure: Total capacity (number of lane miles) of the new roadway and remaining portions of existing U.S. 20. (reciprocal)*.

Rationale: The alternate providing the most overall capacity would best meet growing regional needs.

Criteria 3: Construction Under Traffic [15.5%]

Measure: The number of miles of new roadway that would be built under traffic and for which traffic control and protection would be needed.

Rationale: The alternate with the least number of miles of roadway that would cause traffic to be disrupted during construction would have the least impact.

Criteria 4: Local Highway System [15.5%]

Measure: The number of miles of existing U.S. 20 remaining to serve local traffic. (reciprocal)*.

Rationale: The alternate leaving the most mileage of existing U.S. 20 not serving through traffic would have the most benefit for the region.

Criteria 5: Cost to Maintain [11.9%]

Measure: The estimated annual maintenance costs (in dollars) including the new roadway and any remaining portions of existing U.S. 20 (costs based on IDOT maintenance records for highways of this type.)

Rationale: The alternate costing the least to maintain would have the least negative impact.

* Criteria 2 and 4 measure positive effects rather than negative. Consequently, to accurately calculate the Alternate Preference Score (see attached matrix), the reciprocal of the raw scores was used.

Criteria 6: Cost to Build [10.1%]

Measure: The estimated total cost (in dollars) for construction and utilities.

Rationale: The alternate with the least cost to build would have the least negative impact.

Data was used from IDOT's technical studies to measure the criteria impacts for each alternate. The alternate preference scores for the Council matrix show that scores for the freeway alternates ranged between 7.8 and 8.1, with the Longhollow alignments being the lowest. The two expressway alternates have greater impacts with scores ranging from 10.1 to 10.5. (See Advisory Council Matrix, Exhibit 3.)

Thus, Council members decided that their matrix, considered alone, primarily shows that a freeway is preferable to an expressway, that the Longhollow alignments are preferred and that the Work Groups' input would be the most significant factors in their analysis. They then addressed other parameters they had previously decided to discuss, in a qualitative way; i.e., regional economic development and the build versus no build alternatives.

## ADVISORY COUNCIL ANALYSES

### Premises for Recommendation

The Council's recommendations were based on the following premises:

- Alternate alignments would be considered in their entirety, not divided into separate segments.
- Council would consider the Work Groups' findings as stand-alone products
- Work Group findings would be supplemented with findings by the Council on non-Work Group issues
- The Council would report its overall conclusions to IDOT in terms of both objective scores and an overall written summary.

The Council met in a working session on Saturday, August 11, 2001, to discuss and to begin the development of its report and recommendations to IDOT.

### Consensus and Mitigation

Council members agreed that they were in a position to develop a consensus opinion or recommendation rather than one that carried minority or dissenting opinions of specific Work Groups.

In addition, Council members agreed that in reaching a consensus in which not all individual Work Groups could retain their first alternate preference and in the overall interests of the region, the Council would recommend that IDOT provide mitigation measures to address specific Work Group concerns.

### Build Versus No-Build Alternatives

In considering the Build versus No-Build alternatives, the Council agreed to support the Build option due to the need to improve safety and to manage growing traffic volumes in the region. Again, the Council emphasized mitigation of negative impacts that may be incurred from any Build option.

**Expressway Alternates**

In reviewing both the Council and Work Group matrices, the Council eliminated the expressway alternates from further consideration. While the expressway alternates incurred the lowest cost of all the alternates, the Council decided the overall negative impacts were too large to warrant support.

The expressway alternates would cause the most home and structure displacement for agricultural families and operations. From an environmental perspective, the expressway alternates caused the most harm for natural areas and preserving the regions uniqueness. In addition, the expressway alternates caused the largest loss of tax revenue while at the same time creating the most ownership of maintenance burdens for local governments.

While the Tourism Work Group matrix shows a preference for the expressway alternates, representatives of the Group on the Council stated that the matrix criteria had been established when it appeared the expressway alternates would more closely follow the existing U.S. 20 alignment.

After finding that much of the existing highway could not be utilized as a four-lane alignment, the Tourism Work Group determined that other alternates better met their needs for scenic preservation and growth of tourism-related businesses.

**Council Impact Matrix**

Council members stressed the importance of safety among the criteria that they considered. Accident data projected to 2020 shows there would be fewer accidents on any of the freeway alternates compared to the expressway alternates. This data combined accident projections not only for the new expressway or freeway, but also the remaining portions of existing U.S. 20.

In addition, the Council's discussion on cost to build a freeway focused on the Longhollow alternates as the least costly freeway alternates. Alternates with the tunnel option cost approximately $8 million more than the same alternates without a tunnel based on IDOT's cost estimates. Some Council members thought the tunnel added a unique feature to the new highway and therefore was worthy of consideration.

Council members also considered concerns raised by emergency service personnel interviewed in Government Work Group studies. Emergency service providers did not favor the tunnel alternates because of the difficulty of providing service within the tunnel in the case of a vehicular accident or a spill of hazardous material.

**North / South Simmons Mound**

Finding a strong interest in the South Simmons Mound variation of the freeway alignment for economic development concerns in the Stockton area, the Council decided that the North Simmons Mound alternates should be eliminated from further consideration. The village of Stockton and the Stockton Chamber of Commerce submitted letters supporting the South Simmons Mound option, which is closer to the community.

In addition, the South Simmons Mound variation has one fewer interchange than the North Simmons Mound variation. The Canyon Park Road interchange proposed for the North Simmons Mound variation would not be provided thereby taking less agricultural land.

With the elimination of the Canyon Park Road interchange, the Tourism Work Group and others recommended that IDOT ensure that appropriate signing is placed on the new four-lane highway which clearly directs travelers to the Apple River Canyon State Park via the Stockton interchange, thereby providing economic benefits to Stockton.

All Council members agreed with this approach, even though several had initially preferred the North Simmons Mound alternate.

**Irish Hollow Alternates**

The Council decided to eliminate the Irish Hollow alternates from further consideration primarily because of natural areas, wetlands and endangered species considerations and because the alternates are longer than others, utilizing more of the region's land resources.

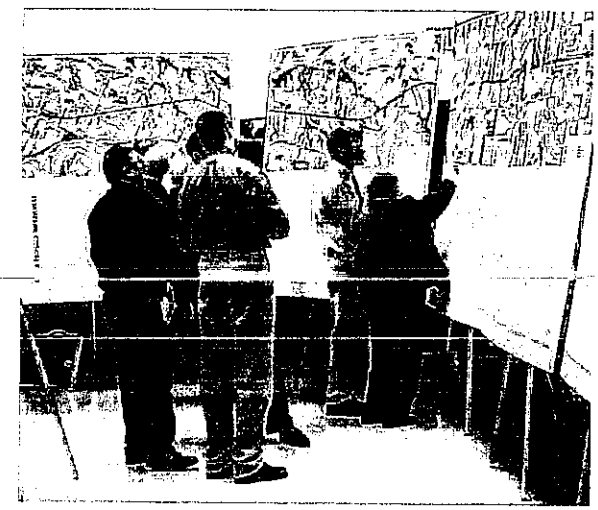
Initially, the Economic Development Work Group felt strongly that the alternate closest to the Village of Hanover would better serve that community. Letters from the Village of Hanover and the Hanover Chamber of Commerce officials were submitted to the Council supporting the Irish Hollow alternates.

However, the Irish Hollow and Upper Irish Hollow alternates south of Elizabeth would be located in a creek valley below the village, raising floodplain and local growth and development issues. The land available for development south of Elizabeth is limited due to the floodplain. In addition, due to elevation differences, the alternate would not afford travelers the expected good view of the village from the highway.

In addition, the interchange south of Elizabeth doesn't serve all local communities well. It creates a back door entrance to Hanover through its residential areas and causes a circuitous routing to communities north of Elizabeth.

**Upper Irish Hollow and Longhollow Alternates**

Council members noted that an overall comparison of Work Group impact summary data and alternate preference scores show preferences primarily for the Upper Irish Hollow and Longhollow alternates. (See Summary of Work Group Assessments - Exhibit 4.)



The Agriculture and Environment Work Groups prefer the Longhollow alternates. The Environment Work Group preference was supported by criteria for preserving natural areas and threatened and endangered species. IDOT biological studies show habitat for the timber rattlesnake in Tapley Woods and south of that natural area, including the Irish Hollow and Upper Irish Hollow alternates.

The Agriculture Work Group preference for the Longhollow alternate is supported by criteria for taking the fewest prime and important farmland acres, minimizing adverse travel miles to agricultural suppliers

and markets and the mixing of farm vehicles with commercial/tourist traffic.

The Longhollow alternate has only one interchange which is farther from Elizabeth and Hanover than the two interchanges to the south and west of Elizabeth on the Upper Irish Hollow alternates. The Longhollow alternate also requires a $1.8 million upgrade of the Scales Mound Road at Elizabeth according to the Jo Daviess County Engineer, since many travelers would choose to use it as a short-cut to Elizabeth.

However, connecting Scales Mound Road with IL 84, which is part of the Longhollow alternate, is viewed as a separate but major advantage of this alternate by many on the Council. In addition, Council members also felt that choosing a more northerly alternate would better serve the Village of Scales Mound, while Hanover would still benefit by having improved overall access. Also, Council members unanimously agreed that IDOT should assume responsibility for upgrading the Scales Mound Road at Elizabeth by making it part of the design and construction of the Longhollow alternate.

All Council members determined that environmental considerations are very important due to the concerns of natural resource and agriculture agencies and the legal standing in current law afforded threatened and endangered species and natural areas. They believe that recommending an alternate that impinges more harshly on these areas could result in a legal challenge and halt progress on building a four-lane highway in the region.

In addition, since farmers would have to give up the most land for a new four-lane highway, Council members considered their preferences to be very important. From a land-use planning standpoint, several Council members, including the Government Work Group members, said that choosing an alignment north of Elizabeth would best facilitate local growth and development contiguous to Elizabeth on the west and north and keep development centered in the IL 84/U.S. 20 corridor.

Regarding the needs of Galena Territory, Council members felt that either alternate would adequately serve residents' needs. They noted that previously IDOT had taken into consideration the desires of the Territory not to have an interchange at its back entrance along the Snipe Hollow alternate and to move proposed interchanges away from its front entrance.

**Thus, Council members unanimously agreed that Alternate 2, the Longhollow alternate with the South Simmons Mound variation, would best accommodate the interests of the most individuals and communities in the region.**

The Council was able to reach this consensus based on the understanding that all Council members would be supportive of the mitigation issues raised by each Work Group and that IDOT would take progressive and proactive steps to preserve the scenic beauty and protect the ecosystems of this area.



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